

# Chapter 1 — Purpose and Need

A group of oil and gas companies, collectively identified as the Powder River Basin Companies (Companies), has notified the U.S. Department of Interior, Bureau of Land Management (BLM) and U.S. Department of Agriculture, Forest Service (FS) of their intent to develop additional coal bed methane (CBM) resources in Wyoming's Powder River Basin (PRB). Implementation of this project would continue and expand development of CBM that has been occurring in the PRB over the last few years. In general, the Companies propose to:

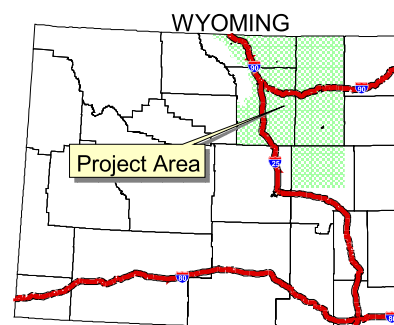
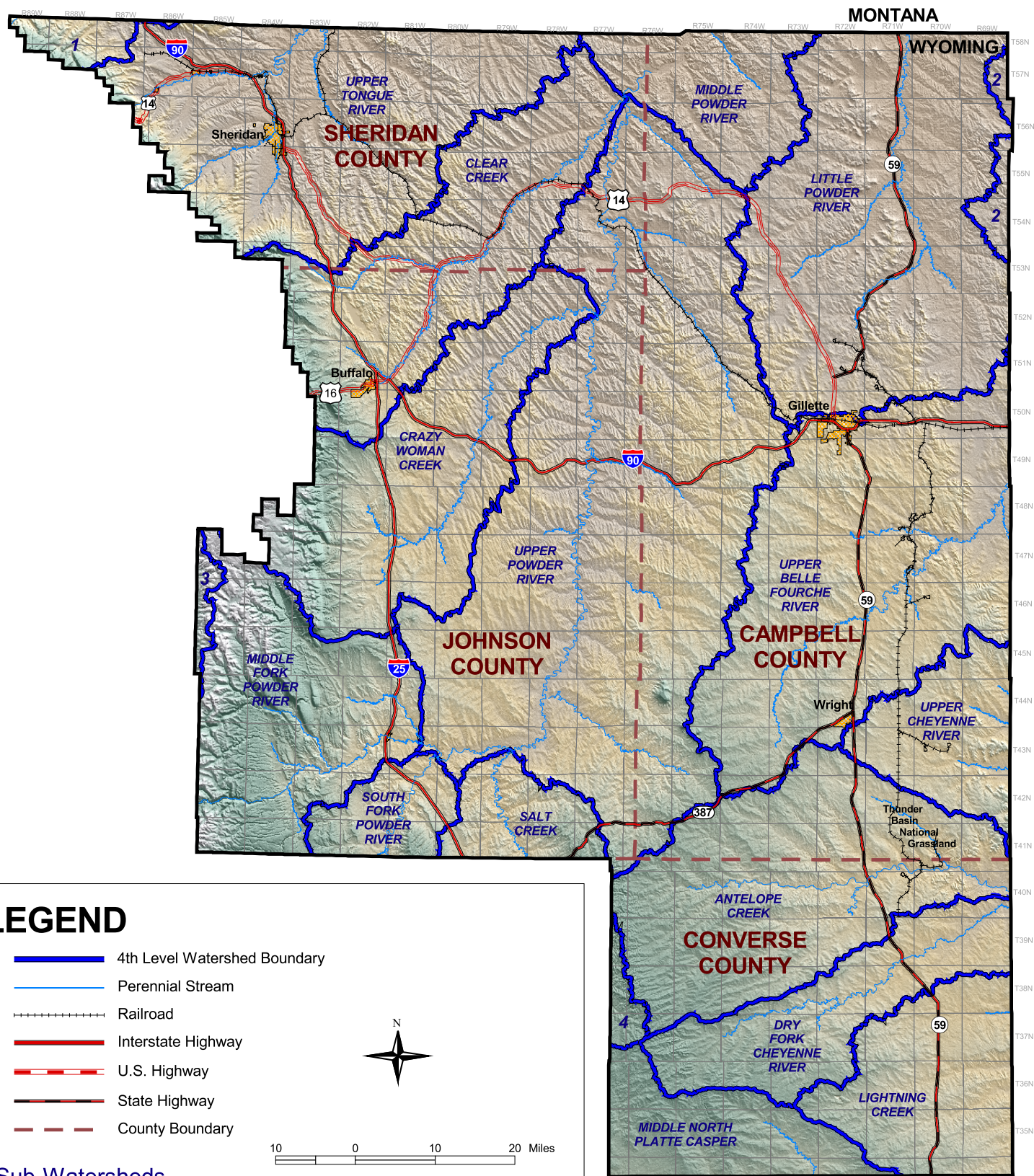
- Drill, complete, operate, and reclaim almost 39,400 new natural gas wells and
- Construct, operate, and reclaim various ancillary facilities needed to support the new wells, including roads, pipelines for gathering gas and produced water, electrical utilities, and compressors.

The proposed project would occur in an almost 8,000,000-acre Project Area (Figure 1-1). This Project Area encompasses all or parts of Campbell, Converse, Johnson, and Sheridan counties and all or parts of eighteen 4<sup>th</sup> order watersheds (sub-watersheds). The proposed project would involve both public and privately owned lands. The public lands include lands administered by the BLM, National Forest System lands, and state lands. Additional information on land ownership and jurisdiction is presented in Chapter 3.

## Development of Oil and Gas on Federal Lands in the Powder River Basin

Oil and gas activity in the PRB is generally classified into two categories: CBM and non-CBM. Development of CBM resources began in the mid 1980s. With advancements in technology, development and production of CBM has been increasing substantially since the mid 1990s. In contrast, production of non-CBM resources was relatively stable from 1986 through 1991, but has been declining sharply since 1991 (BLM 2001f). Overall, oil and gas development in the PRB, exclusive of CBM, is expected to slowly decline (BLM 2001f).

Four documents provide the primary guidance for the development of oil and natural gas from federal lands and minerals estate in the Project Area. Two of these documents are the resource management plans (RMPs) for the Buffalo and Casper Field Offices. The other two documents provide the primary guidance for the Thunder Basin National Grassland (TBNG), which is administered by the Medicine Bow National Forest. These documents are the Land and Resource Management Plan (LRMP) for the Medicine Bow National Forest and TBNG and the Final Environmental Impact Statement (EIS) and Record of Decision (ROD) for Oil and Gas Leasing on the TBNG, which were completed in 1985





and 1994, respectively. In July 2001, the FS released a Final EIS and proposed LRMP for the TBNG to replace the 1985 plan. However, release of the ROD is not expected until early in 2002. Thus, the 1985 LRMP is still in effect.

In addition to the four guidance documents, the BLM and FS have conducted several specific analyses on the development of CBM on federal lands. They include the American Oil and Gas Marquiss Field Coal Bed Methane Project EA (BLM 1992a), Exxon Pistol Point Coal Bed Methane Project Environmental Assessment (BLM 1992b), Gillette South Coalbed Methane Project Draft EIS (BLM 1995b) and Final EIS (BLM 1997a), Lighthouse Coal Bed Methane Project Environmental Assessment (BLM 1995c), Gillette North Coal Bed Methane Project Environmental Assessment (BLM 1996), Wyodak CBM Draft and Final EISs (BLM 1999c and 1999d), and Wyodak Drainage CBM Environmental Assessment (BLM 2000). These documents and their associated decision documents specifically address the development of CBM that has been occurring on federal lands since 1992.

## **Purpose of and Need for the Proposed Action**

The Companies hold valid federal, state, and private leases for oil and natural gas in the Project Area. The leases have created contractual and property rights for the Companies from the United States, the State of Wyoming, and private mineral owners to develop oil and natural gas resources. The purpose of the Companies' proposal is to extract, transport, and sell oil and natural gas at a profit from the portions of the Project Area leased by them.

The BLM and FS recognize the extraction of oil and natural gas is essential to meeting the Nation's future needs for energy. As a result, private exploration and development of federal oil and gas reserves are integral parts of the agencies' oil and gas leasing programs under the authority of the Mineral Leasing Act of 1920, as amended by the Federal Land Policy and Management Act (FLPMA) of 1976 and the Federal Onshore Oil and Gas Leasing Reform Act of 1987. The BLM and FS' oil and gas leasing program encourages the development of domestic oil and gas reserves and reduction of the United States' dependence on foreign sources of energy.

As a result of the contractual and property rights created by the valid leases, the direction contained within the BLM's oil and gas leasing program, the status of the BLM's two RMPs and the FS' LRMP and Oil and Gas Leasing Final EIS, the BLM and FS need to evaluate the level of development of oil and natural gas in the Project Area over the next ten years. Specifically, the BLM and FS need to address the Proposed Action and reasonable alternatives to that action directly, indirectly, and cumulatively.

When the four primary guidance documents identified above were prepared, the levels of development for oil and natural gas anticipated at the time were less than levels currently proposed by the Companies and the agencies' current Reasonably Foreseeable Development (RFD) Scenario (Appendix A). In particular, the current and proposed levels of development of CBM were not specifically defined. Consequently, the BLM and FS need to evaluate conformance of the

Proposed Action and alternatives to that action with the Buffalo RMP, Casper RMP, Medicine Bow National Forest's LRMP, and the TBNG Oil and Gas Leasing EIS and, if necessary, amend these documents to address the additional development comprising the selected alternative.

Therefore, this EIS serves five purposes. First, it provides the basis to analyze and disclose the impacts of the level of development proposed within the Project Area (both under the Proposed Action and RFD scenario). It addresses the effects of implementing a level of development of oil and natural gas within the Project Area that is conceptual in nature. The wells, roads, pipelines, and ancillary facilities depicted in this EIS represent a proposed level of development and tentative locations for these facilities. The final location for each component would be determined through future site-specific analyses that the BLM and FS would require for each facility. These analyses would occur when the Companies file applications for each component, such as an Application for Permit to Drill (APD), a FS Special Use Permit (SUP), or a BLM Right-of-Way (ROW) Grant.

Second, this EIS provides the means for the BLM and FS to provide federal minerals to meet the Nation's energy needs. It also facilitates protection of the financial interest of the United States by preventing the drainage of federal minerals.

Third, the EIS identifies mitigation measures to address issues and conditions of approval for the subsequent site-specific applications for individual locations. These measures and conditions would be incorporated into the process during permitting of the individual facilities (again through the APD, SUP, or ROW Grant processes).

Fourth, the FS will use the analysis documented in this EIS to revise the 1994 leasing decisions on those portions of the TBNG that have potential for CBM development (about 80,000 acres of National Forest System lands). The outcome of the impact analysis will be assessed against current lease stipulations to determine whether the current LRMP lease stipulations need to be modified or if new stipulations need to be developed. This decision would revise previous decisions made by the FS for the TBNG.

Finally, similar to the FS, the BLM is also using the outcome of the impact analysis to review the existing RMP decisions. This includes areas open and closed to leasing, lease stipulations, and authorized mitigation measures. This review will determine whether: (1) changes to current designations of areas open and closed to oil and gas leasing need to be made, (2) current RMP lease stipulations need to be modified or new stipulations need to be developed, and (3) new mitigation measures need to be enacted. Should items one, or two, or both be determined to be necessary for either of the two RMPs, an amendment would be needed. If the decision maker determines the BLM needs to amend one or both RMPs, the analyses contained in this EIS will provide the basis for amending the RMPs. The Final EIS and ROD would serve as amendments to the Buffalo RMP and Casper RMP.

## NEPA Process, Including Tiering and Decision Making

The National Environmental Policy Act (NEPA) and directives by the Council on Environmental Quality (CEQ) require the BLM and FS to analyze proposed actions involving federal lands and leases in terms of their potential effects on the human environment. Furthermore, regulations implementing the Mineral Leasing Act of 1920 require the BLM and FS to review and act on APDs and attached Surface Use Plans of Operations (SUPO) and to decide on the requirements for surface occupancy provided by the SUPO. The BLM and FS also issue ROW Grants and SUPs, respectively, to construct and operation linear transportation facilities, such as roads and pipelines, across federal lands under Title V of FLPMA and the Mineral Leasing Act.

The analysis of effects to the human environment discloses the potential environmental consequences of proposed actions and alternative actions. Another responsibility of the BLM and FS is establishing provisions for ensuring the reclamation of facilities and disturbed lands if an oil and gas operator would fail to complete adequate reclamation efforts. Bonds are required for oil and gas operations on federal leases to indemnify the government for safe rehabilitation, royalty payments, and civil penalties. Bonds also are required for ROWs on federal lands.

The BLM, Buffalo Field Office in Buffalo, Wyoming is the lead federal agency responsible for conducting the NEPA analysis and preparing this EIS. The FS (Medicine Bow National Forest) is a cooperating agency and is responsible for protecting non-mineral resources on National Forest System lands in the TBNG. The development of the Proposed Action and the alternatives was conducted by an oversight team consisting of the BLM, FS, State of Wyoming agencies, five conservation districts, and the four counties. Wyoming agencies specifically designated to represent the State as a cooperating agency on this team included the Office of Federal Land Policy, Department of Environmental Quality (WDEQ), the Wyoming Oil and Gas Conservation Commission (WOGCC), and Wyoming State Engineer (WSEO). The State also designated another eight agencies to assist these four agencies.

This document provides the responsible agencies with information upon which to base a final decision that considers factors relevant to the proposal. Scoping issues and concerns raised by the public and agencies drove the development of alternatives and focused the environmental impact analysis. This EIS documents (1) the analysis of effects that could result from implementation of the Proposed Action or alternatives and (2) the development of environmental protection measures necessary to reduce or eliminate environmental consequences.

The regulations implementing NEPA encourage tiering in EISs. Tiering is the process of referencing information presented in other previously prepared NEPA documents, such as EISs to minimize repetition. This EIS is specifically tiered to the four guidance documents identified previously.

Finally, this EIS is not a decision document; it documents the process used to analyze the potential environmental consequences of implementing the proposed oil and gas development project and alternatives to the Proposed Action. The decisions about the proposed project will be documented in separate RODs (one for the BLM and one for the FS) signed by the agency's responsible official. The BLM and FS' decisions will apply to federal lands and leases administered by both agencies. Decisions by other jurisdictions to issue or not to issue approvals related to this proposal may be aided by the disclosure of effects available in this analysis.

## **Decisions to be Made Based on this NEPA Analysis**

The decision makers for the BLM (Wyoming State Director) and FS (Medicine Bow-Routt National Forests Supervisor) will decide based on the analysis documented in this EIS, whether current RMP or LRMP lease stipulations are adequate or if new stipulations need to be developed. They will determine whether any changes to current designations of areas open or closed to oil and gas leasing need to occur. Also, they will determine if new mitigation measures need to be adopted, and if any of the management plans need to be amended.

## **Decisions to be Made Following this NEPA Process**

The RODs associated with this EIS will not be the final review or the final approvals for all actions associated with the PRB Oil and Gas Project. Although the RODs would approve a maximum level of oil and gas development and its general location, the BLM and FS must analyze and approve each component of the project that involves the disturbance of federal lands on a site-specific basis. The method used to evaluate each surface-disturbing activity is the APD or ROW Grant/SUP, which would be required before any construction can occur.

The APD includes a surface use program and a drilling plan. The detailed information to be submitted under each program is identified in Onshore Oil and Gas Order No. 1 and 43 Code of Federal Regulations (CFR) 3162.3. An on-site inspection of the locations proposed for the well, access road, pipelines, and other areas of proposed surface use would be conducted before approval. The inspection team would include the BLM, FS (if construction would occur on National Forest System lands), the lessee or its designated representative, the primary drilling and construction contractors, and federal grazing lessees. For inspections involving split estate lands (lands with private surface ownership and federal minerals ownership), the BLM also would invite the surface owner to attend.

The purpose of the on-site inspection would be to identify potentially sensitive areas and the environmental consequences associated with the proposal at each specific location and site-specifically apply the methods needed to mitigate those effects. The on-site could include site-specific surveys for cultural resources or threatened or endangered species, if the potential for occurrence of these re-

sources exists on or near the proposed disturbance. After the site inspection, the APD may be revised or site-specific mitigation may be added as Conditions of Approval to the APD, consistent with applicable lease terms, for the protection of surface or subsurface resource values near the proposed activity. These may include adjusting the proposed locations of well sites, roads, and pipelines; identifying the construction methods to be employed; and identifying reclamation standards for the lands.

Since the issuance of the ROD for the Wyodak Final EIS, the BLM has been requiring that CBM projects be submitted as Plans of Development (POD). A POD is a group of wells and their supporting infrastructure (e.g., roads, pipelines, power lines, water discharge points, booster stations, and compressor stations) for a given geographic area or sub-watershed. The POD helps the operators develop a logical, economical, environmentally sound CBM project that the BLM can efficiently process and approve.

The BLM is responsible for conducting an environmental analysis on BLM lands (BLM surface ownership and all federal minerals ownership), preparing the documentation, and providing mitigation measures to protect surface resources for APD approval. The FS would have similar responsibilities on National Forest System lands. The BLM is responsible for approval of the drilling program, protection of ground water and other subsurface resources, and final approval of the APD on both BLM and National Forest System lands.

Access roads and pipelines on BLM-managed land outside the applicant's lease would require a ROW Grant. Likewise, facilities on National Forest System lands would require an SUP. The APD could be acceptable as an application for a ROW Grant or SUP for off-lease facilities, if it provides sufficient detail of the entire proposal.

After drilling, routine well operations would not require approval. However, the BLM would have authority for approving a variety of related activities. Any changes to an approved APD, certain subsequent well operations, and all subsequent new surface disturbances, such as workover pits, would require prior approval. Complete details of subsequent well operations are contained in 43 CFR 3162.3–2. Disposal of produced water from Federal leases would require prior approval, as outlined in Onshore Oil and Gas Order No. 7. The BLM also would approve plugging and abandonment of wells, hydrogen sulfide protection measures (if necessary), gas venting, gas flaring, and certain measures for handling production.

## Authorizing Actions

A variety of federal, state, county, and local permitting actions would be required to implement any of the alternatives. Table 1–1 lists the major federal and state permit, approvals, and consultations likely to be required for the PRB Oil and Gas Project. However, the list is not necessarily complete. In addition, various county and local permitting and approval actions would be required for any alternatives selected by the decision makers.

**Table 1–1 Major Federal and State Permits, Approvals, and Consultations Potentially Required for the PRB Oil and Gas Project**

Issuing Agency/Permit Approval Name	Nature of Permit Action	Applicable Project Component
<i>Federal Permits, Approvals, and Authorizing Actions</i>		
<i>USDI – Bureau of Land Management</i>		
Permit to Drill, Deepen, or Plug Back (APD), CBM Plan of Development (POD), and Sundry Notice, plugging and abandonment, venting, and flaring Rights-of-Way Grant and Temporary Use Permit	Controls drilling and production for oil and gas on federal onshore leases.	Wells and production facilities.
Cultural Resource Use Permit	Right-of-way grant on BLM-managed lands.	Oil and gas pipelines, roads, facilities, etc. on BLM-managed lands.
Pesticide Use Permit	Archaeological surveys and limited testing on public lands. Archaeological data recovery (excavation) of sites on public lands.	All surface-disturbing activities.
National Noxious Weed Act Compliance	Control of pests.	Wells, roads, and ancillary facilities.
	Controls noxious weeds.	Any occurrence of noxious weeds on or near project facilities.
Material Sales	Sales of sand, gravel, and riprap.	Construction activities. <sup>1</sup>
<i>USDA – Forest Service</i>		
Special Use Permit	Surface disturbance on FS-managed lands.	Wells, roads, pipelines, and facilities on FS-managed lands.
Special Use Permit (Cultural Resources)	Archaeological surveys and limited testing on public lands. Archaeological data recovery (excavation) of sites on public lands.	All surface-disturbing activities.
<i>USDI Fish and Wildlife Service</i>		
Endangered Species Act Compliance (Section 7)	Protects threatened and endangered species.	Any activity potentially affecting species listed as or proposed for listing as threatened or endangered.
Migratory Bird Treaty Act	Protects migratory birds.	All surface-disturbing activities.
Bald Eagle Protection Act	Protects bald and golden eagles.	All surface-disturbing activities.
<i>Advisory Council on Historic Preservation</i>		
Cultural Resource Compliance (Section 106)	Protects cultural and historic resources. Coordinated with the Wyoming State Historic Preservation Officer (SHPO).	All surface-disturbing activities.
<i>U.S. Department of Army Corps of Engineers</i>		
Permit to Discharge Dredged or Fill Material (Section 404 Permit)	Authorized placement of dredged or fill material in waters of the United States or adjacent wetlands.	All surface-disturbing activities.
<i>U.S. Department of Transportation</i>		
Construction and operation of natural gas pipelines.	Prescribes minimum safety requirements for pipeline facilities and the transportation of gas, including pipeline facilities.	Natural gas pipelines.
<i>State Permits, Approvals, and Authorizing Actions</i>		
<i>Wyoming State Engineer's Office</i>		
Permit to Appropriate Ground Water	Registering ground water rights for all uses, except stock and domestic.	Wells.



**Table 1–1 Major Federal and State Permits, Approvals, and Consultations Potentially Required for the PRB Oil and Gas Project**

Issuing Agency/Permit Approval Name	Nature of Permit Action	Applicable Project Component
Permit to Construct a Reservoir	Ensures the safety and structural integrity of water storage facilities.	Water storage facilities.
Permit to Appropriate Surface Water	Applications for any request for putting surface waters of the state to a beneficial use.	Facilities to transport or store surface waters.
Permit for Land Application of Produced Water	Authorizes the application of produced water to lands for disposal.	Land Application Disposal facilities.
Permit to Appropriate By-product Water for Additional Beneficial Uses	Authorizes the use of by-product water for beneficial uses.	Facilities to dispose of produced water when used for additional beneficial uses, such as stock watering.
<i>Wyoming Department of Environmental Quality</i>		
National Pollutant Discharge Elimination System (NPDES) Individual Coal Bed Methane Permit	Authorizes discharge of produced water to surface waters of the state.	Any point-source surface discharge.
NPDES General Permit for Storm Water Discharges	Controls discharge of storm water pollutants associated with industrial and construction activities.	Construction activities disturbing five or more surface acres of land and gas production facilities that have had a discharge of a reportable quantity
New Source Review (NSR) Permit (non-Prevention of Significant Deterioration)	Controls emissions from new or modified sources.	All pollutant emission sources and construction activities, including compressors and larger portable diesel and larger gas ( $\geq 300$ hp) generators.
Fugitive Dust Control	Control fugitive dust emissions.	Construction of facilities and vehicle traffic.
<i>Wyoming Department of Transportation</i>		
Access Permit	Authorizes access roads tying into state or federal highways.	All project roads
<i>Wyoming Oil and Gas Conservation Commission</i>		
Permit to Use and Construct Earthen Pit for Temporary Use or for Reserve Pit	Authorizes the construction and use of an earthen pit for oil and gas wells.	Oil and gas wells.
Permit to Drill/Deepen/Plug Back	Authorizes the drilling, deepening, or plugging of oil and gas wells.	Oil and gas wells.
Permit to Use and Construct Earthen Pit for Retention of Produced Water	Authorizes the construction and use of an earthen pit for the storage and evaporation of produced water.	Oil and gas wells.
<i>Wyoming State Historic Preservation Office</i>		
Section 106 Cultural Resource Consultation	Determines significance of cultural resources potentially affected by surface-disturbing activities.	All surface-disturbing activities.

